



SFA to the Internet

Business Case

Last Revision	Last Review	Description
12/15/2000		Draft copy.
01/04/2001	01/05/2001	Draft copy without costs.
01/09/2001	01/10/2001	Updated w/ comments.
01/11/2001	01/16/2001	Updates from WAN IPT.
01/16/2001	01/17/2001	Updated w/ comments.
01/18/2001		Updates from 01/17/2000 WAN IPT.
01/19/2001		Updates from final review.
01/24/2001	02/05/2001	Updated risk section.
02/06/2001	02/07/2001	Updates to eliminated costs and operational costs.
02/07/2001		Updates regarding consistency of business cases.

Prepared by: SFA to the Internet Team

Date: January 19, 2001



Change History Log

Date	Change Description	Author
12/15/2000	Initial draft of business case.	Michael A. Horak
01/04/2001	Draft of business case without costs.	Michael A. Horak
01/09/2001	Updates from WAN IPT comments.	Michael A. Horak
01/11/2001	Updates from the 01/10/2001 WAN IPT meeting.	Michael A. Horak
01/16/2001	Updates from review prior to 01/17/2001 WAN IPT meeting.	Michael A. Horak
01/18/2001	Updates from WAN IPT meeting held on 01/17/2001.	Michael A. Horak
01/24/2001	Added risk about Campus-Based in risk section.	Sharon Barfield
02/06/2001	Added EDconnect development/support as an eliminated costs and reduced on-going costs by eliminating phone support, which is included in the one-call business case.	Michael A. Horak
02/07/2001	Removed team individuals from introductory section. Updated VDC costs and modified eliminated costs.	Michael A. Horak



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1 Project Information

Name: SFA to the Internet

Project Sponsor: Kay Jacks (SFA Schools Channel)

Project Lead: Mike Horak (NCS Pearson)

2 Project Description

Describe the need for change (the business problem to be addressed).

The Student Financial Assistance (SFA) office is identifying ways to reduce the costs of delivering student financial aid. Current SFA data transmissions are administered under the Title IV Wide Area Network (WAN) contract, which is scheduled to expire on September 30, 2001. SFA does not plan on extending this contract; however the service will need to be continued.

What is the purpose of the initiative?

A solution that provides substantial cost savings to SFA and constituents by moving SFA data transmissions to the Internet, and provides SFA the first step towards "tombstoning" the Title IV WAN contract. Total net savings of \$10,728,000 are projected over five years by moving SFA transmissions to the Internet. Projected savings include estimated implementation and operation costs for the VDC and Application Systems (based on SFA historical data and in-house understanding of Application System processing). Both the VDC and the Application Systems will provide their own estimated implementation and operation costs to the WAN IPT by February 2, 2001. The final comprehensive WAN IPT business case (due to be delivered on 2/28/2001) will include those cost updates. Savings will be realized beginning with fiscal year 2002 and proceeding through fiscal year 2005.

What is the scope of the initiative, including what it is not?

The scope of this initiative is two-fold; 1) Move SFA data transmissions off the proprietary network and to the Internet, and 2) Retire Title IV On-line query system and replace with a web solution.

This initiative includes the following:

1. Requirements

Gather and define the requirements for the SFA to the Internet project. Requirements will be analyzed and allocated producing a Customer Requirements Allocation Document (CRAD). Upon approval by the project team and impacted groups, the Functional Specification will be prepared based on the input from the CRAD. The Software Development Project Plan will be updated to reflect the estimates, resource allocations, schedules and commitments for performing the work. Update and confirm the implementation plan developed during the business case.

2. Development and Test

Design, develop, unit test and perform system testing activities based on the requirements allocated to software. Perform system integration with the bTrade.com products, and modify the EDconnect 32-bit software to call the bTrade.com EasyAccess API. Perform acceptance testing of bTrade.com software prior to system testing. Perform system testing to verify the system meets specified requirements and ensures the software complies with the Functional Specification. Perform volume testing, stress testing and performance testing of the application and hardware environment.



3. **SFA Acceptance Test**
Assist SFA in the development of the acceptance criteria (criteria that a system or component must satisfy in order to be accepted by a customer) and perform formal testing with SFA to determine whether the system satisfies the acceptance criteria.
4. **Beta Test**
Perform testing with selected Title IV destination points (both PC and non-PC) and Title IV application systems. Identify beta participants, distribute software and documentation, provide customer service support, provide technical support, collect and analyze beta results, and create the beta test summary. Review beta test with SFA and selected beta participants.
5. **Software Implementation**
Plan and implement the bTrade.com products at the Virtual Data Center (VDC) for both development and production environments. Perform installation testing at the VDC to uncover installation errors (e.g., files, libraries, connectivity, and valid hardware configuration).
6. **Migration Support**
Perform administration and maintenance of Internet solution while migrating Title IV destination points (approximately 7500) to the new system. Migrate destination points in waves (focus on high volume destinations first) and provide migration status reporting to SFA. Provide customer and technical/system support during the Internet migration.
7. **SecureServe Software**
This deliverable includes the bTrade.com products for the SFA to the Internet solution. The software products consist of SecureManager, SecurePortal, and EasyAccess. This deliverable also covers the professional and enabling services provided by bTrade.com (e.g., support during installation, trouble shooting and validation of bTrade.com products at the VDC, both test and production environments).
8. **SecureServe Software Maintenance**
This deliverable identifies the software maintenance costs associated with the bTrade.com software (SecureManager, SecurePortal, EasyAccess) and on-going support and maintenance.

This initiative does not include the following:

1. **WANC Participation Management Screen**
The current Title IV WAN On-Line Query system consists of three sub-menus: WANU (used by SFA constituents), WANE (used by SFA) and WANC (used by Title IV WAN administrative and customer service staff). This business case includes providing a web based solution to replace the current WANU and WANE sub-menus. This business case doesn't include WANC. The WAN IPT Participation Management sub-team should address WANC.

What is the start date and end date of the initiative?

The planned start date is February 13, 2001. The planned end date is September 30, 2001, which coincides with the expiration of the Title IV WAN contract. Due to factors beyond the control of the IPT, it may not be possible to meet this end date. These factors are described in more detail in the Risks section.



What other business areas/external groups are affected by the implementation of this initiative and how are they affected?

The following groups are affected by this initiative:

1. SFA - Manage transition of large user base, affects all Title IV application systems, exposure to reliability and availability of Internet, and requires up-front investment.
2. SFA end-users (schools, guarantee agencies, state agencies and third party service provider) - Non-PC users install new software and update existing job streams; PC users download and install new version of EDconnect from SFAdownload.ed.gov; and all destination points must have an Internet connection to send/receive data.
3. Students (FASFA Express users) - Currently FASFA Express uses the GEIS VAN for transmissions, and the software will be changed to use the new system. The student will be required to download a new version of software from SFAdownload.ed.gov.
4. Title IV Application Systems (CPS, NSLDS, DL Origination, DL Servicing, RMFS, PELL, and Campus-Based) - Participate in transition planning activities, install software upgrade (EasyAccess) and modify existing job streams (modify based on SFA to the Internet Title IV Application Systems Requirements), support pilots, beta test and integration test.
5. Virtual Data Center - Participate in transition planning activities, install & support hardware/operating system (based on SFA to the Internet VDC Requirements), support system testing, installation testing, and beta tests. Will need to remove GEIS connectivity at conclusion of implementation.
6. SFA Tech Call Center - Learn new administrative system and procedures to support Title IV destination points migrating to the new system.

What systems are impacted by the implementation of this initiative and how are they impacted?

The following systems are affected by this initiative:

1. EDconnect Software - EDconnect software will be modified to call the EasyAccess2000 DLL to perform necessary application functions.
2. Open*Net System - Title IV destination points will be moved off this system. The Open*Net system will be retired.
3. Enterprise System - Title IV destination points will be moved off this system. The Enterprise system will be retired.
4. SFAdownload.ed.gov - Web site will be modified so Title IV destination points can download EDconnect software.
5. Title IV WAN sub-systems - Review for impacts and possible system integration (Archive, MIS reporting, Process Control and Participant Management). The SFA to the Internet IPT sub-team will work with other WAN IPT sub-teams (e.g., Participation Management) to make sure there is no duplication of effort.

What business processes are impacted by the implementation of this initiative and how are they impacted?

This initiative will impact existing business processes of SFA data transmission (telecommunications support) and On-line Query, which are currently administered under the Title IV WAN contract.



3 Technologies Used

List the proposed technologies that will be used to implement this project

Name/type	Proposed use	Has technology been used at SFA before? Where?	Does Technology fit SFA's Architecture Standard? Explain.	Does SFA have the technical expertise to implement this technology? Why?
bTrade.com's EasyAccess (MF, mid-range, PC)	Client used by SFA constituents to compress, secure and encrypt SFA data transmissions.	No. However, SFA constituents use Comm-Press component to compress data.	No. Provides interface to SFA business applications. Needs to be added to SFA's Architecture Standard.	Yes. EasyAccess2000 implementation is similar to implementing Comm-Press software.
bTrade.com's SecureManager (Win95/98/2000 or NT, with ODBC driver and connection, such as Oracle)	Manage SFA constituents and trading relationships. Provides web interface for mailbox management.	Yes. SFA has experience with ED-ENTER.	No. Provides interface to SFA business applications. Needs to be added to SFA's Architecture Standard.	Yes. Will use VDC architecture.
btrade.com's SecurePortal (SUN)	Store and forward mechanism.	Yes. SFA has experience with ED-ENTER.	No. Provides interface to SFA business applications. Needs to be added to SFA's Architecture Standard.	Yes. Will use VDC architecture.
bTrade.com's EasyAccess API.	EasyAccess client 'C' callable API.	Yes. EDconnect software calls existing API's.	No. Provides interface to SFA business applications. Needs to be added to SFA's Architecture Standard.	Yes. SFA currently has applications calling API's.
EDconnect 32-bit Software	SFA constituents (PC platform use EDconnect to send and receive data.	Yes. SFA constituents currently use EDconnect to send and receive data.	No. Provides interface to SFA business applications. Needs to be added to SFA's Architecture Standard.	Yes. Resources are available.
SSL 3.0	Security protocol used by EasyAccess2000.	Yes. SFA web sites use this technology.	Yes. SSL 3.0 is an industry standard.	Yes. SFA web sites use this technology.



4 Benefits

The SFA to the Internet initiative is primarily aimed at reducing costs associated with current SFA data transmissions. The benefits of the initiative will provide SFA with a non-intrusive solution for constituents, reduce the overall cost of delivering student aid, and reduce operating costs through consolidation of operations and systems. SFA will begin to realize benefits after the first Title IV destination point has converted to the Internet solution (e.g., kilo-character charges reduce with each destination point migrated to the Internet).

Reduce Unit Cost

Quantified Benefit (\$)	How will benefit be measured/realized?	When will benefit be realized?
Cost will be reduced from \$0.0807 per kilo-character to \$0.0301 per kilo-character. Calculation is based on FY2000 kilo-character volume of 51,246,663.	Kilo-character volume will be captured and the per kilo-character charges calculated annually and provided to SFA in an MIS report.	SFA will begin to realize benefits when the first destination point migrates to the Internet. When all Title IV destination points have migrated to the Internet solution SFA will realize the full benefit.
Assumptions		
<ol style="list-style-type: none">1. Quantified Benefit (\$) is based on Actual WAN FY2000 costs currently billed under the Title IV WAN contract. These costs totaled \$4,140,000 in FY2000 (which is a summary of the network-related costs in bullets 2, 3, 4 5 and 6 below)2. Total FY2000 Network Development, test plan, documentation and advisory group - \$250,0003. Total FY2000 On-line Query - \$630,0004. Total FY2000 Open*Net and Enterprise, data transmission charges and telecommunications support (\$2,300,000 of the \$2,650,000 are kilo-character charges; \$350,000 related to telecomm support) - \$2,650,0005. Total FY2000 Enterprise trading partner and mailbox administration - \$190,0006. Total FY2000 EDconnect development and support - \$420,0007. GEIS archive/restore system will be available for 30 days after the last destination point migrates to the Internet solution (current archive/restore requirement is 180 days)8. Assumes CPS Query is available on the Web and no longer needs the GEIS TPX system9. Assumes NSLDS Query is available on the Web and no longer needs the GEIS TPX system		

Increase Customer Satisfaction

Quantified/Qualitative Benefit	How will benefit be measured/realized?	When will benefit be realized?
Provide SFA PC constituents a non-intrusive solution that builds upon the EDconnect interface.	Use "demo" system to gather feedback early in the process, and conduct survey after beta test.	After the first SFA PC constituent has migrated to the Internet.
Provide SFA non-PC constituents a non-intrusive solution, which involves an upgrade to existing jobs (upgrade to compression & decompression steps).	Use "demo" system to gather feedback early in the process, and conduct survey after beta test.	After the first SFA non-PC constituent has migrated to the Internet.



Quantified/Qualitative Benefit	How will benefit be measured/realized?	When will benefit be realized?
Provide SFA constituents a web browser solution (SecureManger) to view and manage mailbox contents.	Use "demo" system to gather feedback early in the process, and conduct survey after beta test.	After the first SFA constituent has migrated to the Internet.
Provide SFA constituents a solution that reduces operating expenses (no kilo-character charges).	Constituent won't be billed for SFA data transmissions.	After the first SFA constituent has migrated to the Internet solution.
Assumptions		
<ol style="list-style-type: none">1. Have not included benefits (\$) that schools will realize with the elimination of kilo-character charges2. Assume Title IV destination points have an existing ISP connection, and will not incur additional operating costs3. Assume Title IV destination points (PC and non-PC) meet minimum platform requirements to perform Internet transmissions		

Increase Employee Satisfaction

Quantified/Qualitative Benefit	How will benefit be measured/realized?	When will benefit be realized?
Provide SFA with increased efficiencies (no bridge) and reduction in duplicate systems (one store and forward system).	Conduct survey within SFA channels and track incident reports and compare with historical information.	After Open*Net and Enterprise systems are retired.
Provide SFA with simplified tracking and oversight by consolidating SFA data transmissions and hardware/software at the VDC.	Conduct survey within SFA channels. Track against historical information.	After Open*Net and Enterprise systems are retired.
Provide SFA with cost reductions by implementing COTS solution.	Track ease of future system/application integration initiatives (e.g., MQ Series).	After Open*Net and Enterprise systems are retired.
Assumptions		
<ol style="list-style-type: none">1. None have been identified		



Estimated overall dollar amount of all benefits listed above.

Quantified Benefits						
	BY (2001)	BY+1 (2002)	BY+2 (2003)	BY+3 (2004)	BY+4 (2005)	Total
Eliminated Costs (Section 4)	\$190,000	\$4,700,000	\$5,110,000	\$5,430,000	\$5,600,000	\$21,030,000
Less Implementation & Operating costs (Section 5)	\$3,446,000	\$1,543,000	\$1,657,000	\$1,771,000	\$1,885,000	\$10,302,000
Net Savings	(\$3,256,000)	\$3,157,000	\$3,453,000	\$3,659,000	\$3,715,000	\$10,728,000
Cumulative Net Savings	(\$3,256,000)	(\$99,000)	\$3,354,000	\$7,013,000	\$10,728,000	\$10,728,000
Assumptions						
1. Assumes BY is fiscal year 2001 (October 1, 2000 through September 30, 2001) 2. Assumes Internet migration will have started August 2001, and SFA will have benefited from reduction in kilo-character charges. For BY, assume reduction in kilo-character costs of 50% of two months charges (\$2,300,000 / 12 * .50 * 2 = \$190,000). All other network-related costs for BY would still be incurred 3. FY2000 kilo-character costs were approximately \$2,300,000, which represents a 35% increase in volume and costs from FY1999. Assume future volume will increase as follows (2002 - 20%, 2003 - 15%, 2004 - 10%, 2005 - 5%). The increases are reflected in the Eliminated Costs row 4. Assumes all application systems will migrate to the new system prior to September 30, 2001 5. Assumes all destination points will migrate to the new system prior to September 30, 2001						

5 Costs

This section provides estimated costs, including those to implement the initiative (BY = Base Year) and costs to support it over its useful life (BY+1 through BY+4).

COSTS						
	BY (2001)	BY+1 (2002)	BY+2 (2003)	BY+3 (2004)	BY+4 (2005)	Total
(1) SFA to the Internet Implementation	\$2,650,000	\$0	\$0	\$0	\$0	\$2,650,000
Operations						
(2) SFA to the Internet On-Going Costs	\$0	\$1,000,000	\$1,100,000	\$1,200,000	\$1,300,000	\$4,600,000
(3) Title IV Application Systems	\$400,000	\$0	\$0	\$0	\$0	\$400,000
(4) Virtual Data Center	\$396,000	\$543,000	\$557,000	\$571,000	\$585,000	\$2,652,000
(5) Total	\$3,446,000	\$1,543,000	\$1,657,000	\$1,771,000	\$1,885,000	\$10,302,000



Assumptions

Definition of rows:

- (1) SFA to the Internet Implementation - One time costs to implement the solution. Includes scope covered in section 2 of this document (Requirements, Development and Test, SFA Acceptance Test, Beta Test, Software Implementation, Migration Support, and SecureServe Software). Does not include hardware/operating system cost or costs for applications systems to convert. Assumes implementation costs will be incurred in 2001
- (2) SFA to the Internet On-Going Costs - Costs to support the SFA to the Internet solution after implementation
- (3) Title IV Application Systems - Application systems BY costs have been *estimated* at \$400,000. At this time RMFS, Direct Loan Servicing and Direct Loan Origination have not submitted estimates. However, the \$400,000 includes estimates for the 3 application systems based on actual estimates received to date. Support estimated at \$0, and assumes on-going support is handled under existing maintenance contracts. Application system costs will be collected on February 2, 2001 and business case updated
- (4) Virtual Data Center - BY costs based on 9 months. VDC operational costs escalated at .025 beginning BY1
- (5) Total – Summary of rows (1), (2), (3) and (4)

Assumptions:

1. SFA Tech Call Center will be used to support the Internet migration, but the costs of these calls are not in the business case because they are included in the one-call business case
2. On-going costs includes: maintain trading partner relationships, customer service support, system administration support, MIS reporting related to network traffic, and bTrade.com software maintenance. On-going costs don't include efforts to system integrate new functionality beyond what is considered normal maintenance (e.g., software fixes to known problems, performance fix)
3. Assume VDC will support hardware/OS and implementation and maintenance procedures
4. Assume (after proper planning w/ the VDC) hardware/OS, bandwidth environment will not be an issue
5. EDconnect rollover costs are included in on-going costs

6 Total Cost of Ownership

What is the level of required enhancement after implementation?

The level of enhancement after implementation will be based on new requirements/enhancements requested by SFA and constituents. Refer to section 5 Costs for on-going costs.

What is the life span of this initiative?

The life span of this initiative is indefinite and dependent on SFA, and is expected to exceed the five-year period covered in this business case.

7 Alternatives

Describe what could be done in place of this initiative and describe the consequences of each alternative.

Alternative	Consequence
Remain as-is	SFA would continue to incur data transmission charges and on-line query charges. SFA architecture would include two store and forward systems, and two data centers (VDC & GEIS). Open*Net services are scheduled to terminate on September 30, 2001 and will not be available to SFA customers without additional GEIS contract negotiations.



Alternative	Consequence
Non-technology solution	A non-technological solution is not applicable for this initiative.
Enhance an existing system	SFA would need to order large-scale modifications to the Enterprise system and purchase client/server software for Internet transmission. COTS Enterprise does not accommodate header/trailer infrastructure required by Title IV application systems.
Implement on a smaller scale	SFA would not realize total benefit of moving all SFA constituents to the same solution, and subsequently retiring Open*Net and Enterprise systems.
Other	N/A

8 Risks

Risk	Description of Risk	Mitigation Strategy
Schedule	A delay in one task causes a cascading delay in dependent tasks, which would delay the end date.	Fulltime software project manager will be assigned to the initiative. Project will be managed following CMM level 2 processes. Project schedule will be reviewed weekly with impacted groups and tracking & oversight provided to management. Schedule impacts will be addressed weekly and date re-negotiated.
Financial	ROI is impacted because total benefits can't be realized until all SFA constituents have migrated to the Internet.	Employ an Internet migration campaign, which addresses migrating SFA constituents to the Internet solution smartly & quickly. Weekly status will be provided to management on status (actual - VS- planned) of migration and possible issues.
Financial/ Schedule	May be necessary to extend the Title IV WAN contract if all Title IV destination points have not migrated to the Internet solution by September 30, 2001.	Implementation schedule will detail migration of destination points (includes high volume destination points migrating first) to the Internet solution. During migration phase planned -VS- actual will be monitored and reported to SFA.
Technology	Development environment not available on time at the VDC and cause impacts to system integration activities.	Develop & review requirements/implementation plan with VDC & bTrade.com early in the process to identify possible issues. Formal weekly (daily as needed) meetings will be held to address/resolve issues.
Technology	Production environment not sized, scaled properly to handle production volume.	Plan hardware, OS, CPU, space, sizing, bandwidth and SAN requirements based on historical and future needs. Documents will be reviewed and approved by SFA, VDC and NCS Pearson staff.
Scope	Requirements have been baselined but continue to change.	Project team will review requirements w/ impacted groups for approval. Upon receiving approval a baseline will be established. Changes to the baseline will be managed by the project SCCB (approval or disapproval). Approved items will be assessed and dates negotiated.
Management	The Campus-Based system is being modernized and a concurrent effort is	The WAN contract would need to be extended to support this application system until their



Risk	Description of Risk	Mitigation Strategy
	underway to recompute the operations and maintenance of both the existing system and the “to be” modernized system. There is a risk that task orders will not be authorized in a timely fashion to ensure both the existing and new systems are modified to handle data transmissions over the Internet.	transition is complete.
Management	Communication time (e.g., time to answer requirements-clarification questions, status of schedule) is slower than expected.	Communicate to team leads that issues need to be resolved w/in 24 hours. Formal weekly (daily as needed) meeting will be held with project leads to address/resolve issues.
Exposure	SFA data transmissions subject to ISP failure and Internet security threats.	Develop and publicize list of recommended ISP accounts. Develop security program and take security measures to ensure privacy of data.
End-users	End-user input is not solicited, so product fails to meet user expectations and must be reworked.	Meet with SFA constituents early in the process to learn their needs and concerns. Spend time looking for key SFA constituents to participate in the beta and publicize the success of the beta.
End-users	End-user fails to migrate to the Internet solution as planned for a variety of reasons (e.g., no ISP, staff, and operating system requirement).	Develop an aggressive migration campaign to quickly and smartly move end-users to the Internet. Assign PC and non-PC leads to lead migration efforts and provide status reporting to SFA. Provide single-point of contact for end-user.

9 Acquisition Strategy

SFA developed software selection criteria to select and evaluate candidate software suppliers for this initiative. An initial candidate supplier list was developed, and preliminary information gathered. Based on the preliminary information gathered, the number of suppliers was reduced to the top three-four candidates. Additional research was then performed on each of the top candidates and eventual supplier selected.

The research performed validates that the bTrade.com software components EasyAccess2000, SecureManager2000 and SecurePortal2000 provide the functionality that SFA constituents require, and meets SFA architecture plans and future initiatives. NCS Pearson staff (with the support of bTrade.com) conducted an extensive evaluation of the bTrade.com software components.

10 Schedule/Milestones

The schedule and associated dates are still in the planning stage and subject to change.

#	Milestone	Start Date	End Date
1	Cost estimates collected from impacted groups (meeting scheduled on 01/18/2001 to review SFA to the Internet requirements with Title IV application systems and VDC).	01/18/2001	02/02/2001
2	DSG Review.	01/24/2001	01/24/2001



#	Milestone	Start Date	End Date
3	ITRB Review.	02/01/2001	02/01/2001
4	Update business case with costs from the VDC and Title IV application systems and submit to WAN IPT Core Team.	02/02/2001	02/06/2001
5	Submit updated business case to SFA.	02/07/2001	02/07/2001
6	Submit implementation business proposal to SFA.	02/12/2001	02/12/2001
7	SFA approves the implementation business proposal.	02/12/2001	02/19/2001
8	Begin implementation project.	02/19/2001	02/19/2001
9	Implement test environment at the VDC.	02/27/2001	03/26/2001
10	Perform system integration.	03/27/2001	06/18/2001
11	Implement production environment at the VDC	06/19/2001	06/25/2001
12	Perform system testing.	07/03/2001	07/23/2001
13	Perform beta testing.	08/08/2001	08/21/2001
14	Production rollout.	08/22/2001	